

(Model.)

S. P. STEIN.  
PADLOCK.

No. 440,069.

Patented Nov. 4, 1890.

Fig. 1.

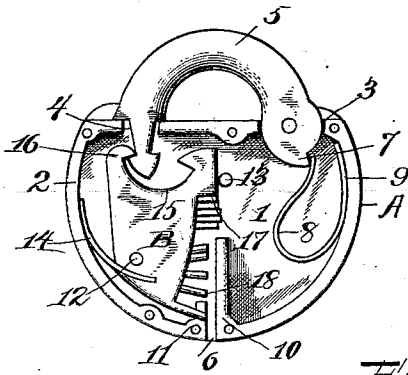


Fig. 2.

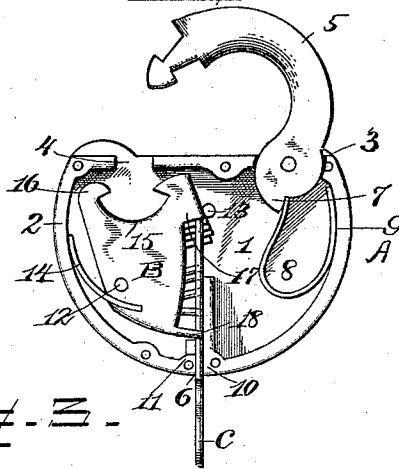


Fig. 3.

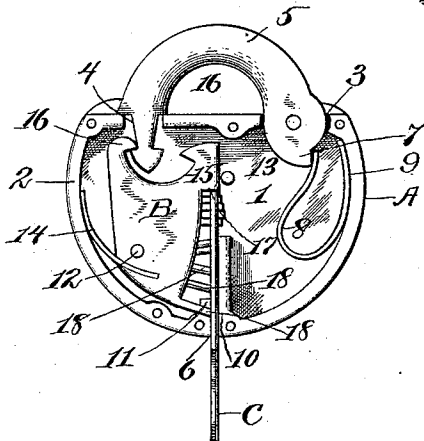


Fig. 4.

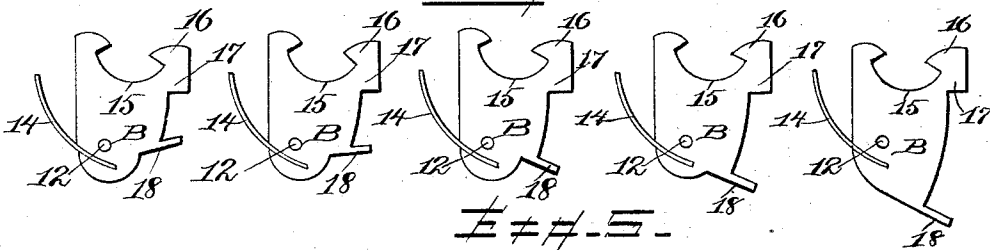
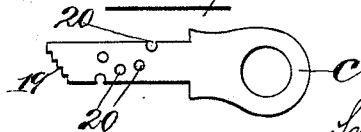


Fig. 5.



Witnesses

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# UNITED STATES PATENT OFFICE.

SAMUEL P. STEIN, OF MILTON, PENNSYLVANIA, ASSIGNOR TO THOMAS B. GOULD, FREDERICK M. KELLY, AND JOHN G. KURTZ, ALL OF SAME PLACE.

## PADLOCK.

SPECIFICATION forming part of Letters Patent No. 440,069, dated November 4, 1890.

Application filed July 25, 1890. Serial No. 359,873. (Model.)

*To all whom it may concern:*

Be it known that I, SAMUEL P. STEIN, a citizen of the United States of America, residing at Milton, in the county of Northumberland and State of Pennsylvania, have invented a new and useful Padlock, of which the following is a specification.

My invention has relation to improvements in padlocks, and the object is to provide a padlock of simple construction and of great security against unauthorized attempts to unlock the same.

My invention consists in the novel construction of parts and their combination, as will be hereinafter fully described, and as will be specifically pointed out in the claims, as required by the statute.

I have fully and clearly illustrated my invention in the accompanying drawings, wherein—

Figure 1 is an elevation of the padlock with one of the plates removed, showing the mechanism in locked relation. Fig. 2 is a similar view showing the parts in unlocked relation. Fig. 3 is a view showing the position of the parts when an imperforated key is inserted. Fig. 4 are details of the tumblers. Fig. 5 is a view of the key.

A designates the casing, consisting of face-plates 1—one only of which is shown—connected by a rim-piece 2, in which are formed the usual openings 3 4 to take the hinge end and nose of the shackle 5, and having a key-hole 6. In the casing is pivoted the shackle 5, having at its hinge end a lug or seat 7, against which or in which the free end of a spring 8 rests and serves to throw the shackle upward out of the casing when the nose end is released from the catch in the tumblers. The spring 8 has its other end secured to the rim-piece, substantially as shown in the drawings at 9. The nose end of the shackle is of arrow-head shape to afford catches for the locking-lugs on the tumblers, the one for the locking-lugs of the tumblers and the other to be engaged by the inner lugs of the tumblers should an attempt be made to lift the tumblers by other means than the proper key. Vertically projected from the rim-piece, with its key-face on alignment with the edge of the

key-hole and extending a distance into the casing, is a key guard or guide 10, which serves as a guard to the entrance of the key and also to prevent the projecting points on the heels of the tumblers from passing too far through the apertures in the key. On the inner face of the rim-piece, at the opposite edge of the key-hole, may be a short piece 11, which serves as a guide to the key in conjunction with the more extended guide or guard 10. In the casing is fixed a stud 12, on which the tumblers are pivoted and mounted, and another stud 13 is fixed in the casing against which the inner edges of the tumblers lodge and rest when in locked position, substantially as shown in Fig. 1 of the drawings.

B designates the tumblers. These are of the form shown in Fig. 4, consisting of metal plates having a bearing-hole to receive the bearing or pivot 12 in the casing. Each tumbler has a spring 14 fixed thereto, the free end of the springs resting against the inner face of the rim-piece and operating to always throw the tumblers into engagement with the nose of the shackle, as shown in Fig. 1 of the drawings. The catch of the tumblers consists of a recess 15, having oppositely-inwardly-extending lugs 16, which engage the nose of the shackle in the locked position or when the tumblers are pushed in the opposite direction by the entrance of an unfitted key or plate. At the rear of each tumbler is a shoulder 17, against which the end of the key engages when pushed in the lock and results in lifting the tumbler-catch out of engagement with the nose of the shackle. These shoulders are of different depths or heights in the respective tumblers in order that they may be pushed to alignment or in operative arrangement by the different steps on the end of the key. At the heel of each tumbler is a projection 18, preferably made round to engage in similarly-shaped holes or perforations in the key, as hereinafter more specifically specified. These tumblers may in number be two or more. I have shown them five in number in the lock illustrated. C designates the key, made of a flat plate with the end provided with a number of steps 19, graduated or arranged to suit the varying positions of

the shoulders on the respective tumblers. In the key are a number of holes or apertures 20, in which the projecting heel ends of the tumblers enter when the key is inserted in the lock. These holes 20 register with the line of movement of the projections on the tumblers, so that when a key is inserted which is designed to unlock the mechanism the projections will enter the holes of the key when the key is pushed in far enough to lift the tumblers to their unlocked position. It will be observed that if a key is inserted in the lock which has no holes, or which has holes which do not register with the line of movement of the heel-projections of the tumblers, that the tumblers cannot be moved far enough to unlock them from their engagement with the nose of the shackle. It will also be observed that the arrangement of these pin holes or apertures in the key is such that if the lock is tampered with by wires or pins or any of the skeleton utensils of dishonesty it will be impossible to direct the means employed with any certainty to any one of the tumblers. If it is attempted to push the tumblers into disengagement with the shackle by lifting them with any means usually employed for that purpose, the attempt will result in moving them beyond the center of movement and into engagement with the inner or reverse side of the catch of the shackle, and thus the attempt to obtain unauthorized entrance be foiled and prevented, because the lock will then be secured by the interlocking of the shackle with the inner lug or catch of the tumblers. The tumblers serve the double purpose of tumblers and also of locking-dogs to engage the end of the shackle.

Having thus described my invention as required by the statute, I proceed to particularly point out and distinctly claim the parts, combinations, and elements which I claim as novel and desire to secure by Letters Patent, as follows:

1. The combination, with the casing and the shackle, of the pivoted tumblers B, formed with a catch to engage the nose of the shackle and having projecting heel portions to engage in apertures in the key, substantially as described.

2. The combination, with the casing and shackle of the tumblers B, formed with oppositely-arranged catches to engage the nose of the shackle and having projecting heel portions to enter the apertures in the key and shoulders to engage the end of the key, substantially as and for the purpose specified.

3. The combination, with the casing provided with a key-hole having a vertically-arranged key guide or guard extending into the casing, and the shackle formed with a spear-shaped nose end, of the tumblers formed with a recess having oppositely-arranged lugs to engage the nose of the shackle, shoulders to engage the steps in the end of the key, and heel portions to enter the apertures in the key, and the key having steps on its end to engage the shoulders on the tumblers, and apertures to receive the heel portions of the tumblers, substantially as and for the purpose specified.

In witness whereof I have hereunto set my hand in the presence of two attesting witnesses.

SAMUEL P. STEIN.

Attest:

WM. H. HACKENBIG,  
JOHN BECKLEY.